

What Is Claimed Is:

1. A non-aqueous laminate adhesive comprising:

a tertiary amino group-containing polyurethane resin (A) obtained by reacting an active hydrogen group-containing compound comprising at least one or more kinds of tertiary amino group-containing glycols, with an organic polyisocyanate with the active hydrogen group being present in stoichiometric excess; and

a polyisocyanate curing agent,

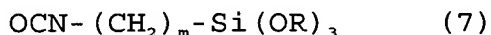
wherein the content of the tertiary amino group in the tertiary amino group-containing polyurethane resin (A) is 0.001 to 1 mmol/g.

2. A non-aqueous laminate adhesive comprising:

a tertiary amino group-containing polyurethane resin (A) obtained by reacting an active hydrogen group-containing compound comprising at least one or more kinds of tertiary amino group-containing glycols, with an organic polyisocyanate with the active hydrogen group being present in stoichiometric excess;

a polyisocyanate curing agent, and

a silane coupling agent represented by the following formula (7):



(wherein R is a methyl group or an ethyl group, and m is an integer of 1 to 5),

wherein the content of the tertiary amino group in the tertiary amino group-containing polyurethane resin (A) is 0.001 to 1 mmol/g.

3. A non-aqueous laminate adhesive comprising:

5 a tertiary amino group- and carboxyl group-containing polyurethane resin (B) obtained by reacting an active hydrogen group-containing compound comprising at least (a) one or more kinds of tertiary amino group-containing glycols and (b) one or more kinds of carboxyl group-containing glycols, with an
10 organic polyisocyanate with the active hydrogen group being present in stoichiometric excess, and

a polyisocyanate curing agent,

wherein each of the content of the tertiary amino group and the content of the carboxyl group in the tertiary amino
15 group- and carboxyl group-containing polyurethane resin (B) is 0.001 to 1 mmol/g.

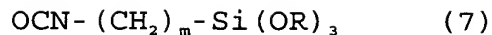
4. A non-aqueous laminate adhesive comprising:

a tertiary amino group- and carboxyl group-containing polyurethane resin (B) obtained by reacting an active hydrogen
20 group-containing compound comprising at least (a) one or more kinds of tertiary amino group-containing glycols and (b) one or more kinds of carboxyl group-containing glycols, with an organic polyisocyanate with the active hydrogen group being present in stoichiometric excess;

25 a polyisocyanate curing agent; and

a silane coupling agent represented by the following

formula (7),



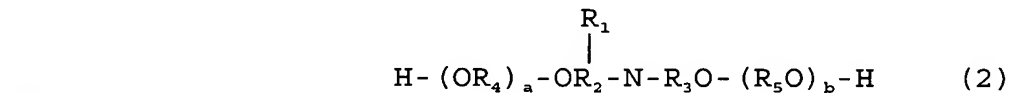
5 (wherein R is a methyl group or an ethyl group, and m is an integer of 1 to 5),

wherein each of the content of the tertiary amino group and the content of the carboxyl group in the tertiary amino group- and carboxyl group-containing polyurethane resin (B) is
10 0.001 to 1 mmol/g.

5. The non-aqueous laminate adhesive according to claim 1, wherein the tertiary amino group-containing glycols are selected from the group consisting of compounds represented by the following formulas (1), (2), (3) and (4):

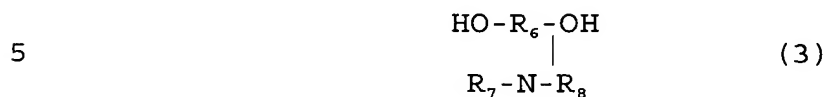


(wherein R₁ is a monovalent hydrocarbon group having 1 to 10 carbon atoms, and R₂ and R₃ are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms),

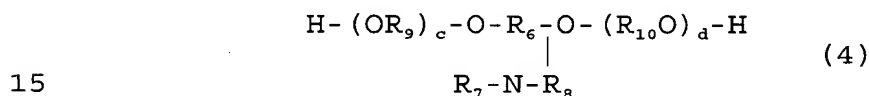


(wherein R₁ is a monovalent hydrocarbon group having 1 to 10 carbon atoms; R₂ and R₃ are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms; R₄ and R₅ are the same or different and are each
30 a divalent organic group having 1 to 10 carbon atoms; and a and b are each such an integer of 0 or more that the number-

average molecular weight of the compound of the formula (2) becomes 300 to 10,000),



(wherein R_6 is a trivalent hydrocarbon group having 1 to 10 carbon atoms, and R_7 and R_8 are the same or different and are each a monovalent hydrocarbon group having 1 to 10 carbon atoms),



(wherein R_6 is a trivalent hydrocarbon group having 1 to 10 carbon atoms; R_7 and R_8 are the same or different and are each a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_9 and R_{10} are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and c and d are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (4) becomes 300 to 10,000).

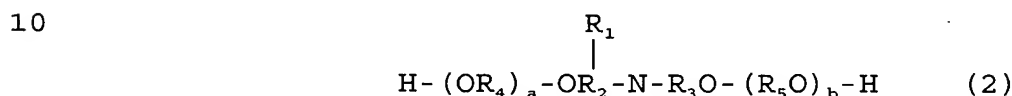
6. The non-aqueous laminate adhesive according to claim 5, wherein the ratio of the moles of the total active hydrogen groups in the tertiary amino group-containing polyurethane resin (A) and the moles of the total isocyanate groups in the polyisocyanate curing agent is 1:20 to 20:1.

7. The non-aqueous laminate adhesive according to claim 2, wherein the tertiary amino group-containing glycols are

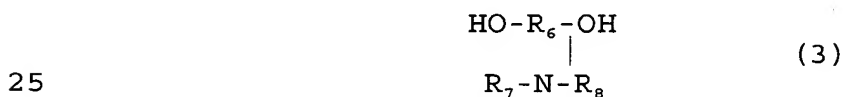
selected from the group consisting of compounds represented by the following formulas (1), (2), (3) and (4):



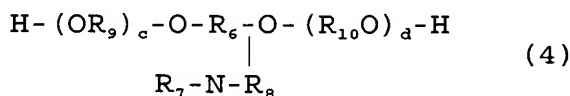
(wherein R_1 is a monovalent hydrocarbon group having 1 to 10 carbon atoms, and R_2 and R_3 are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms),



(wherein R_1 is a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_2 and R_3 are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms; R_4 and R_5 are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and a and b are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (2) becomes 300 to 10,000),



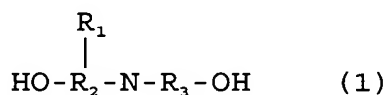
(wherein R_6 is a trivalent hydrocarbon group having 1 to 10 carbon atoms, and R_7 and R_8 are the same or different and are each a monovalent hydrocarbon group having 1 to 10 carbon atoms),



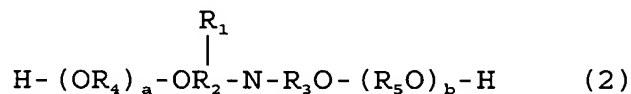
(wherein R_6 is a trivalent hydrocarbon group having 1 to 10 carbon atoms; R_7 and R_8 are the same or different and are each a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_9 and R_{10} are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and c and d are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (4) becomes 300 to 10,000).

8. The non-aqueous laminate adhesive according to claim 7, wherein the ratio of the moles of the total active hydrogen groups in the tertiary amino group-containing polyurethane resin (A) and the moles of the total isocyanate groups in the polyisocyanate curing agent is 1:20 to 20:1.

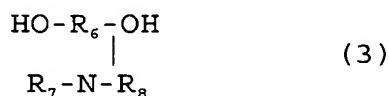
9. The non-aqueous laminate adhesive according to claim 3, wherein the component (a) is selected from the group consisting of compounds represented by the following formulas (1), (2), (3) and (4) and the component (b) is selected from the group consisting of compounds represented by the following formulas (5) and (6):



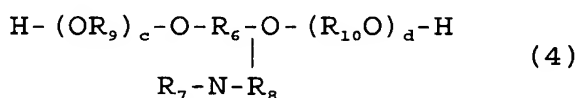
(wherein R_1 is a monovalent hydrocarbon group having 1 to 10 carbon atoms, and R_2 and R_3 are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms),



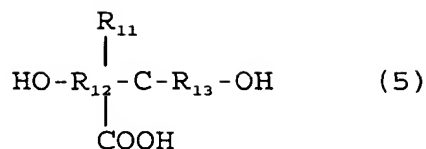
(wherein R_1 is a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_2 and R_3 are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms; R_4 and R_5 are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and a and b are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (2) becomes 300 to 10,000),



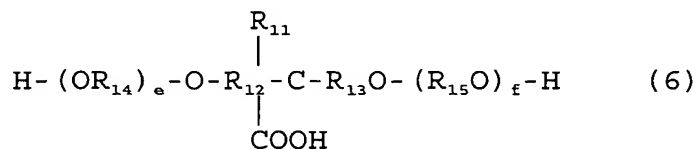
(wherein R_6 is a trivalent hydrocarbon group having 1 to 10 carbon atoms, and R_7 and R_8 are the same or different and are each a monovalent hydrocarbon group having 1 to 10 carbon atoms),



(wherein R_6 is a trivalent hydrocarbon group having 1 to 10 carbon atoms; R_7 and R_8 are the same or different and are each a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_9 and R_{10} are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and c and d are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (4) becomes 300 to 10,000),



(wherein R_{11} is a monovalent hydrocarbon group having 1 to 10 carbon atoms, and R_{12} and R_{13} are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms),

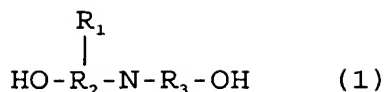


(wherein R_{11} is a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_{12} and R_{13} are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms; R_{14} and R_{15} are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and e and f are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (6) becomes 300 to 10,000).

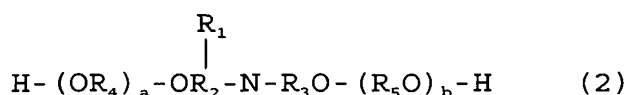
10. The non-aqueous laminate adhesive according to claim 9, wherein the ratio of the moles of the total active hydrogen groups in the tertiary amino group- and carboxyl group-containing polyurethane resin (B) and the moles of the total isocyanate groups in the polyisocyanate curing agent is 1:20 to 20:1.

11. The non-aqueous laminate adhesive according to claim 4, wherein the component (a) is selected from the group consisting of compounds represented by the following formulas (1), (2), (3) and (4) and the component (b) is selected from the group consisting of compounds represented by the following

formulas (5) and (6):



(wherein R_1 is a monovalent hydrocarbon group having 1 to 10 carbon atoms, and R_2 and R_3 are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms),

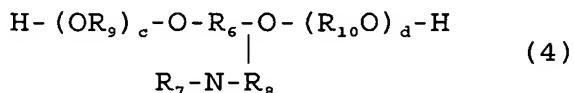


(wherein R_1 is a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_2 and R_3 are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms; R_4 and R_5 are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and a and b are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (2)

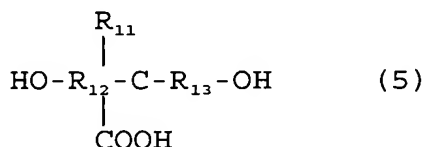
becomes 300 to 10,000),



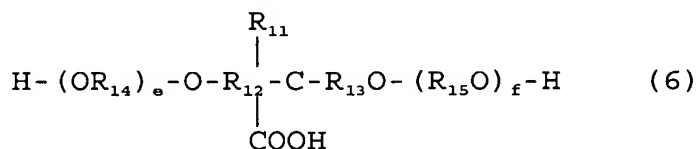
(wherein R_6 is a trivalent hydrocarbon group having 1 to 10 carbon atoms, and R_7 and R_8 are the same or different and are each a monovalent hydrocarbon group having 1 to 10 carbon atoms),



(wherein R_6 is a trivalent hydrocarbon group having 1 to 10 carbon atoms; R_7 and R_8 are the same or different and are each a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_9 and R_{10} are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and c and d are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (4) becomes 300 to 10,000),



(wherein R_{11} is a monovalent hydrocarbon group having 1 to 10 carbon atoms, and R_{12} and R_{13} are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms),



(wherein R_{11} is a monovalent hydrocarbon group having 1 to 10 carbon atoms; R_{12} and R_{13} are the same or different and are each a divalent hydrocarbon group having 1 to 10 carbon atoms; R_{14} and R_{15} are the same or different and are each a divalent organic group having 1 to 10 carbon atoms; and e and f are each such an integer of 0 or more that the number-average molecular weight of the compound of the formula (6) becomes 300 to 10,000).

12. The non-aqueous laminate adhesive according to claim 11, wherein the ratio of the moles of the total active hydrogen

groups in the tertiary amino group- and carboxyl group-containing polyurethane resin (B) and the moles of the total isocyanate groups in the polyisocyanate curing agent is 1:20 to 20:1.

5 13. The aqueous laminate adhesive according to claim 5, wherein the tertiary amino group-containing glycols are selected from the group consisting of compounds represented by the formula (1).

10 14. The aqueous laminate adhesive according to claim 7, wherein the tertiary amino group-containing glycols are selected from the group consisting of compounds represented by the formula (1).

15 15. The aqueous laminate adhesive according to claim 9, wherein the component (a) is selected from the group consisting of compounds represented by the formula (1) and the component (b) is selected from the group consisting of compounds represented by the formula (5).

20 16. The aqueous laminate adhesive according to claim 11, wherein the component (a) is selected from the group consisting of compounds represented by the formula (1) and the component (b) is selected from the group consisting of compounds represented by the formula (5).